

Amendment filed March 17, 2010

Reply to OA dated November 18, 2009

REMARKS

Claims 1-3, 5, 8-12, 14, 17 and 18 are pending in this application. Claims 3 and 12 are canceled herein without prejudice or disclaimer. Upon entry of this amendment, claims 1, 2, 5, 6, 8-11, 14, 15, 17 and 18 will be pending. Entry of this amendment and reconsideration of the rejections are respectfully requested.

No new matter has been introduced by this Amendment.

Claims 3 and 12 are objected to, as being of improper dependent form for failing to further limit the subject matter of a previous claim. (Office action p. 3)

The rejection is moot in view of the cancellation of claims 3 and 12 without prejudice or disclaimer.

Claims 1-3, 5, 8-12, 14, 17 and 18 are rejected under 35 U.S.C. §103(a) as being unpatentable over Tomioka (U.S. Pat. No. 5,079,030) in view of Carpenter (U.S. Pat. No. 5,320,673) and Takashi et al. (JP Pub. No. 2001-149857) and Noritake et al. (JP 2003-117481). (Office action paragraph no. 1)

The rejection of claims 3 and 12 is moot in view of the cancellation of claims 3 and 12 without prejudice or disclaimer.

Reconsideration of the rejection of claims 1, 2, 5, 8-11, 14, 17 and 18 is respectfully requested in view of the evidence in the attached Declaration under 37 CFR 1.132 and the following remarks.

Unexpected results commensurate with current Claim 1

Applicant submits that the method of claim 1 can achieve remarkable effects commensurate in scope with the claims, specifically, a highly dense texture and excellent flip-flop property. These effects result particularly in the method of forming a luster coating film, comprising the steps of: (1) applying an aqueous luster thermosetting base coating composition; (2) applying a thermosetting clear coating composition; (3) applying an aqueous luster thermosetting base coating and composition; and (4) applying a thermosetting clear coating composition; i.e., the method comprising repeating the step of applying an aqueous luster thermosetting base coating composition (steps (1) and (3)), and the step of applying a thermosetting clear coating composition (steps (2) and (4)), wherein in steps (1) and (3), the aqueous luster thermosetting base coating composition is applied in two to five stages, in such a manner that the thickness of the base coating composition applied in each stage becomes 0.3 to 5 μm when cured. Specifically, in the above method, the thickness of the base coating composition applied in each stage is reduced, and a coating film consisting of such thin coating layers superposed is formed; thereby, the remarkable effects, a highly dense texture and high flip-flop property, can be achieved.

To further evidence the above effects of the present invention, Applicant has attached a Declaration under 37 CFR 1.132 signed March 5, 2010, by Tsukasa Fujeda. In the Declaration, a method comprising repeating a step of applying a base coating composition and a step of applying a clear coating composition, and a method in which each of the above steps are not repeated, are conducted with a variety of thicknesses of the base coating composition applied, and

with a variety of the number of stages of applying the base coating composition; and each of the obtained coating films was evaluated for density of texture and flip-flop property.

As shown in Experiments 1 and 2 of the Declaration, on pages 8 to 12, the method comprising repeating the step of applying an aqueous luster thermosetting base coating composition (steps (1) and (3)), and the step of applying a thermosetting clear coating composition (steps (2) and (4)), wherein in steps (1) and (3), the aqueous luster thermosetting base coating composition is applied in two to five stages, in such a manner that the thickness of the base coating composition applied in each stage becomes 0.3 to 5 µm when cured, can produce a coating film with a highly dense texture and excellent flip-flop property.

Comparatively, the coating film obtained in Experiment 5, in which the base coating composition was applied in three stages at each thickness of 8 µm, 4 µm and 4 µm, and the clear coating composition was applied thereover, showed significantly inferior density of texture and flip-flop property. The coating film obtained in Experiment 5 was prepared in accordance with the method disclosed in Tomioka.

Experiment 3 is different from Experiment 4 in that each of the base coating composition and the clear coating composition were repeatedly applied over a coating film consisting of base coating composition layers and clear coating composition layers; however, the coating film obtained in Experiment 3 showed only a slight improvement in the dense texture and flip-flop property.

Experiment 5 is different from Experiment 4 in that the number of the stages of applying the base coating composition is increased from two to three, and the thicknesses of the coating composition applied in the second and third stages are made thinner; however, this resulted in no

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difference in flip-flop property between Experiment 5 and Experiment 4, and the density of texture had an undesirably high value.

The evidence presented in the Declaration demonstrates that a combination of the reduction of the thickness of the base coating composition applied in each stage and the repetition of applying each of the base coating composition and clear coating composition over a coating film consisting of base coating composition layers and clear coating composition layers can considerably improve the dense texture and flip-flop property. This is a result that is **unexpected** over the prior art and represents an unexpected result commensurate with the scope of claim 1.

Additional arguments

In the Amendment dated August 11, 2009, Applicant amended claims 1 and 10 to require that the thickness of the base coating in **each stage** becomes 0.3 to 5 μm when cured. Applicant also amended claim 1 to require that in step (3), the thickness of aqueous luster base coating composition (c) applied in each stage is 0.3 to 5 μm when cured. Applicant argued that Tomioka teaches that it is preferable to form a thick coating film by a single application of the coating composition, and that the limitations of claim 1 yield unexpected results of dense texture and high flip-flop property.

Applicant submits that in the present Office action, the Examiner does not provide any argument in response to Applicant's arguments. Applicant notes that the only revision of the text of the rejection in the present Office action from that of the previous (April 14, 2009) Office action appears to be the deletion of the sentence regarding the thickness of the base coating

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composition applied in the first stage being 8 microns in Tomioka. (See page 4, lines 4-6, of the Office action of April 14, 2009, and the corresponding page 4, 2nd line from bottom, of the present Office action). This was the disclosure of Tomioka that Applicant had argued taught away from the limitation in step (1) of the claims. That is, the Examiner has apparently deleted his previous acknowledgement of this teaching of the reference.

Applicant therefore maintains the previous arguments that there are unexpected results commensurate in scope with the claims, and Applicant requests that the Examiner consider Applicant's previous argument that Tomioka teaches away from the present claims. Applicant here reiterates the following points regarding the cited references.

(1) The invention of Tomioka, which is the main cited reference, is completely different from the present invention in the problem to be solved by the invention and in the means for solving the problem.

More specifically, Tomioka merely states in column 1, lines 33 to 47, that increasing the striking velocity of the paint particles of a water base metallic paint can suppress darkening.

Tomioka nowhere discloses that to obtain a highly dense texture and high flip-flop property, the thickness of the aqueous luster thermosetting base coating composition applied in each stage is reduced, and a base coating film consisting of such thin coating layers successively superposed is formed.

(2) Tomioka merely states in column 1, lines 13 to 15 that "because an air spray gun has a poor paint transfer efficiency [emphasis added], about 25 to 30%, the thickness of the coat attained in one spraying is around 4 microns."

Tomioka further states in column 1, lines 19 to 21 that “[t]aken with the poor paint transfer efficiency, the plurality air spray gun spraying with water base metallic paint is productivity poor.”

Tomioka thus teaches that it is preferable to form a thick coating film by a single application of the coating composition, from the viewpoint of productivity.

None of Carpenter, Takashi, and Noritake et al. discloses that thin coatings each having a thickness of 0.3 to 5 µm are successively formed and superposed in the second and subsequent stages.

On the contrary, the Examples 1 and 2 of Takashi et al., and the Examples 1 and 2 and comparative Examples 1 and 2 of Noritake teach that a coating layer formed by a single application of a metallic thermosetting coating composition by air-spraying may have a thickness of 8 µm or more, which is much greater than 5 µm.

On the contrary, paragraph [0012] and the Examples of Takashi et al., and paragraph [0017] and the Examples of Noritake teach that a coating layer formed by a single application of an aqueous luster thermosetting base coating composition by air-spraying may have a thickness as great as 20 µm, which is much greater than 4 µm.

Therefore, a person skilled in the art would be motivated from Tomioka to increase the thickness of the aqueous luster thermosetting base coating composition of Carpenter, Takashi, or Noritake et al. in order to increase productivity. However, the person skilled in the art would not be motivated to increase the number of coating stages so that thin aqueous luster thermosetting base coating layers each having a thickness of not more than 5 µm are successively formed and superposed.

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The present invention is directed to a method comprising steps (1) and (3) in which an aqueous luster thermosetting base coating composition is applied in two to five stages in such a manner that the thickness of the base coating composition applied in each stage becomes 0.3 to 5 μm when cured. Accordingly, the claimed invention having this feature is not obvious to a person skilled in the art.

(3) Claim 1 requires that in steps (1) and (3), an aqueous luster thermosetting base coating composition is applied in each of the two to five stages, i.e., even in the first stage, in such a manner that the thickness of the base coating composition applied becomes 0.3 to 5 μm when cured.

In contrast, Fig. 5 of Tomioka merely shows a coating film comprising a first coating layer (4a) having a thickness of 8 μm . As mentioned above, Tomioka teaches that it is preferable to form a thick coating layer by a single application of the coating composition, from the viewpoint of productivity. The general teaching of Tomioka to one of skill in the art would therefore be to increase the thickness of the first coating layer (4a) to more than 8 μm , and there would be no motivation to reduce the thickness of the coating layer below 8 μm .

The invention of claim 1 of the present application is directed to a method wherein the thickness of the base coating composition applied in the first stage becomes 0.3 to 5 μm when cured. Accordingly, claim 1 and dependent claims 2, 5, 8 and 9 are not obvious over the cited references.

Nonobviousness of Claims 10, 11, 14, 15, 17, and 18

The inventions of Claims 10, 11, 14, 15, and 17 are, similarly to that of Claim 1, directed to a method of forming a luster coating film, comprising repeating the step of applying an aqueous luster thermosetting base coating composition (steps (1) and (3)), and the step of applying a thermosetting clear coating composition (steps (2) and (4)); wherein in step (1), an aqueous luster thermosetting base coating composition (A) is applied to a substrate in two to five stages, in such a manner that the thickness of the base coating composition (A) applied in each stage becomes 0.3 to 5 μm when cured; and wherein in step (3), an aqueous luster thermosetting base coating composition (C) is applied in two to five stages, in such a manner that the thickness of the aqueous luster thermosetting base coating composition (C) applied in each stage is 0.3 to 5 μm when cured. The above arguments regarding the non-obviousness of claim 1 are applicable to claim 10, and claims 10, 11, 14, 17 and 18 are therefore also not obvious over the cited references.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the applicant's undersigned agent at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

U.S. Patent Application Serial No. **10/576,193**

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In the event that this paper is not timely filed, the applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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Enclosures: Petition for Extension of Time
Declaration Under 37 CFR §1.132 signed by Mr. Tsukasa Fujieda

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